

REMARKS

Applicant expresses appreciation to the Examiner for consideration of the subject patent application. This amendment is in response to the non-final Office Action mailed January 13, 2009, in which claims 1-20 were rejected.

Claims 1-20 were originally presented and remain pending in the application. Applicant proposes to amend independent claims 1, 12 and 19, and respectfully requests reconsideration of the application. Applicant also proposes to amend the specification to clarify the difference between the translating shaft or rod 28 of the finger mechanism and the rod 20 disposed within the elongated tubular portion 18. The subject matter of the amendments is found in the original specification and drawings, and no new matter has been added.

Claim Rejections -- 35 U.S.C. § 102

1. Anticipation rejection based on United States Patent No. 5,626,608 to Cuny et al.

Claims 1-4, 6, 9-14, and 16-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,626,608 to Cuny et al (hereinafter referred to as "Cuny"). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

With regard to independent claim 1, it is respectfully submitted under 35 U.S.C. § 102(b) that claim 1 includes subject matter that is allowable over Cuny, since this reference fails to disclose each and every element as set forth in the independent claim. More specifically, Cuny fails to disclose a surgical device that includes a finger actuator comprising a finger receiving portion operable with a translating shaft, which translating shaft couples directly to a rod disposed with an elongated tubular portion, and where the finger actuator moves in a non-pivoting, linear manner to directly effectuate an equidistant linear movement of the rod as recited in claim 1. Cuny also fails to disclose that the finger actuator moves while the hand of the user is continually maintained in a functional position about the ergonomic handle.

The present invention recites a surgical device 10 having an ergonomic handle 12 that is shaped to conform to a user's hand 14 held in a specific relaxed functional position. (*see* present specification; FIGS. 1-2; page 3, lines 12-18). The handle 12 includes an aperture in which is positioned the finger receiving portion 30 of a finger actuator 16 that is operable with a translating shaft 28. (FIG. 4; page 4, lines 21-29). The translating shaft of the finger actuator 16 is directly coupled to a rod 20 slidably located within an elongated tubular portion 18, so that a non-pivoting linear motion (as shown by arrows in FIG. 2) of the finger actuator 16 directly effectuates an equidistant linear movement of the rod 20. (FIG. 2; page 3, line 19-page 4, line 2). As can be seen, no mechanical leveraging or gearing, etc. is applied between the finger receiving portion 30 and the rod 20, so that a 1:1 ratio of displacement exists between the displacement of the finger actuator 16 and the displacement of the rod 20. In other words, the present invention does not implement a mechanical advantage. And since only a single finger is used to actuate the finger actuator, the hand 14 of the user substantially remains in a relaxed functional position about the ergonomic handle 12 during the non-pivoting, linear movement of the finger actuator 16. (FIGS. 1-2; page 3, lines 12-18).

In contrast, Cuny discloses an endoscopic grasping apparatus 10 having a fixed forward handle or finger ring 16 and a pivoting control handle 18 with a thumb ring 28. (*see* Cuny, FIGS. 1-2; Col. 4, lines 55-67 and Col. 5, lines 44-55). Since the instrument is designed for the lower three fingers to be inserted into finger ring 16 and the thumb to be inserted into thumb ring 28, the hand of the user cannot be orientated in the relaxed, functional position, as recited by claim 1 of the present invention, either before, during or after operation of the Cuny surgical instrument. Rather, the thumb and fingers are continually required to be flexed toward and away from each other in a scissor-like, pivoting motion called for by the apparatus. Additionally, as shown by the curved arrows B illustrated in FIG. 2 of Cuny, the pivotal control handle 18 pivots in response to pressure applied to the inside surfaces of the thumb ring 28. (FIG. 2; Col. 5, lines 32-37). This pivoting motion enables the thumb ring 28 to also provide mechanical leveraging. At no point does Cuny disclose a finger actuator that moves in a non-pivoting, linear manner, as recited in claim 1 of the present invention. Furthermore, since the distance from the thumb ring 28 to the pivot pin 22 is significantly longer than the distance from the rod 42 coupling joint 44 to the pivot pin 22, the large pivoting movements of the control handle 18 with its thumb ring 28 cannot

therefore be equidistant with the smaller pivoting movement of the joint 44 and distal end of rod 42. (FIG. 2; Col. 5, lines 56-col. 6, line 6). In other words, there is no direct coupling, but rather coupling via a mechanism that operates to convert rotational or pivoting motion of the control handle 18 into linear motion of the rod.

Consequently, Cuny does not disclose each and every element of independent claim 1. Therefore, Applicant respectfully submits that independent claim 1 is allowable and urges the Examiner to withdraw the rejection. Applicant further submits that claims 2-4, 6 and 9-11 are also allowable as depending, either directly or indirectly, from allowable base claim 1.

With regard to independent claim 12, it is respectfully submitted under 35 U.S.C. § 102(b) that claim 12 also includes subject matter that is allowable over Cuny, since the reference also fails to disclose each and every element as set forth in independent claim 12. More specifically, Cuny fails to disclose a surgical device that includes a finger actuator comprising a finger receiving portion operable with a translating shaft that is positioned substantially in line with the longitudinal axis of the tubular portion, and where bidirectional pressure applied by a single finger to the finger receiving portion to move the translating shaft in a non-pivoting, linear manner along the longitudinal axis manipulates a functional end in a bidirectional manner and in a common direction to the bidirectional pressure.

As stated above, the present invention recites a surgical device 10 having an ergonomic handle 12 that is shaped to conform to a user's hand 14 held in a relaxed functional position. (FIGS. 1-2; page 3, lines 12-18). The handle 12 includes an aperture in which is positioned the finger receiving portion 30 of a finger actuator 16 that is operable with a translating shaft 28. (FIG. 4; page 4, lines 21-29). The translating shaft 28 of the finger actuator 16 is directly coupled to a rod 20 slidably located within an elongated tubular portion 18, so that a non-pivoting linear motion (as shown by arrows in FIG. 2) of the finger actuator 16 directly effectuates an equidistant linear movement of the rod 20. (FIG. 2; page 3, line 19-page 4, line 2). As a natural consequence of the translating shaft being positioned substantially in line with and coupled directly to the rod 20, the translating shaft 28 and rod 20 move in the same direction in response to a bi-directional pressures applied by the single finger to the finger actuator.

In contrast, Cuny discloses an endoscopic grasping apparatus 10 having a fixed forward handle or finger ring 16 and a pivoting control handle 18 with a thumb ring 28. (*see* Cuny, FIGS.

1-2; Col. 4, lines 55-67 and Col. 5, lines 44-55). Contrary to the Examiner's remarks in the office action, the only movable finger actuator disclosed in Cuny is the pivoting control handle 18 with thumb ring 28, which does not include a translating shaft that is positioned substantially in line with the longitudinal axis of the tubular portion. Furthermore, bi-directional pressure applied to the thumb ring 28 causes the finger actuator 18 to pivot about pivot pin 22. Nowhere does Cuny disclose a finger actuator 18 with a translating shaft that does not pivot, nor does Cuny disclose a finger actuator that moves in a non-pivoting, linear manner, as is recited in claim 12.

Additionally, since the thumb ring 28 of Cuny is located on opposite sides of the fulcrum or pivot pin 22 from the coupling joint 44 that connects the rod 42 to the finger actuator 18, any bidirectional pressure applied by a single finger (e.g. a thumb) to the thumb ring would cause the functional end of the surgical instrument to move in a direction opposite to, and not common with, the direction of the bi-directional pressure. (FIG. 2).

Consequently, Cuny does not disclose each and every element of independent claim 12. Therefore, Applicant respectfully submits that independent claim 12 is allowable and urges the Examiner to withdraw the rejection. Applicant further submits that claims 13-14 and 16-18 are also allowable as depending either directly or indirectly from allowable base claim 12.

2. Anticipation rejection based on United States Patent No. 5,281,220 to Blake, III.

Claims 19 and 20 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 5,281,220 to Blake III (hereinafter referred to as "Blake"). Applicant respectfully traverses this rejection, as hereinafter set forth.

With regard to independent claim 19, it is respectfully submitted under 35 U.S.C. § 102(b) that claim 19 includes subject matter that is allowable over Blake, since this reference fails to disclose each and every element as set forth in the independent claim. More specifically, Blake fails to disclose a method of manipulating a surgical instrument that includes using a single finger to cause a finger actuator to move in a non-pivoting, linear manner away from the hand of the user to directly effectuate operation of a functional end, and while maintaining a hand of the user in a functional position about the ergonomic handle. Furthermore, Blake also fails to disclose using a single finger to cause a finger actuator to move in a non-pivoting, linear manner toward

the hand of the user to directly effectuate operation of a functional end, and while maintaining a hand of the user in a functional position about the ergonomic handle.

As described hereinabove, the surgical device 10 of the present invention includes the finger actuator 16 that is directly coupled proximally to a rod 20 that is slidably located within an elongated tubular portion 18, so that a non-pivoting linear motion (as shown by arrows in FIG. 2) of the finger actuator 16 directly effectuates an equidistant linear movement of the rod 20. (FIG. 2; page 3, line 19-page 4, line 2). The opposite end of the rod 20 is distally coupled to a functional end 22 such as a grasper or scissors, so that bidirectional pressure applied to the finger actuator 16 manipulates the functional end 22 in a bi-directional manner, such as to cause the opening and closing of a grasper or scissors. The present invention also includes a separate rotator 26 that can be used to rotate the function end 22 around the longitudinal axis of the elongated tubular portion 18, which rotation is separate and distinguishable from the operation of the function end effectuated by the finger actuator (FIG. 2; page 4, lines 9-20).

Blake describes an endoscopic surgical instrument more similar to the traditional configuration of Cuny than to the present invention. Like Cuny, Blake discloses a surgical instrument 10 having a handle assembly 14 that includes a stationary hand grip 32 terminating in a finger loop 34 that normally receives the ring finger. (*see* Blake, FIGS. 1-3; Col. 2, lines 55-64). The handle assembly also includes a moveable hand lever 40 pivotably attached at a pivot axis 42 and having a finger loop 44 at the lower end for receiving the surgeon's thumb. (Col. 2, lines 65-69). Since the instrument is designed for the index finger to be inserted into finger loop 34 and the thumb to be inserted into thumb loop 44, the hand of the user cannot be orientated in the relaxed, functional position, as recited by claim 19 of the present invention, either before, during or after operation of the Blake surgical instrument. The upper end of the pivoting hand lever 40 is attached to a linkage which manipulates the operating components of the function end, such as scissor blades. (Col. 2, lines 69-col. 3, line 3). The Blake surgical instrument also includes a slide member 64 with a cam follower 74 projecting radially into a spiral cam groove 72, so that forward and backward action of the slide member causes rotation of the tube 16, link 18 and blade subassembly. (FIG. 2; Col. 3, lines 41-68). This action is similar to the function of the rotator 26 to rotate the elongate tube of the present invention, as recited in claim 20 of the present invention.

As can be appreciated by one of skill in the art, operation of the operating components at

the functional end of the surgical instrument 10 through the movement of a pivoting hand lever 40 (e.g. the finger actuator) is separate and distinguishable from the action of the slide member 64 (or the rotulator of the present invention) to rotate the elongate tube 16 that provides support for the functional end. Thus, Applicant respectfully asserts that the linear movement of the slide member 64 of Blake to rotate the elongate tube 16 may not be associated with the non-pivoting linear movement of the finger actuator of the present invention that directly effectuates similar like linear movement of the rod to operate the functional end, as is recited in Claim 19.

Furthermore, Applicant also asserts that Blake does not disclose a finger actuator that can be moved away from the hand or the user and towards the hand of the user while maintaining the hand in a functional position about the ergonomic handle. As a result, Blake does not disclose each and every element of the presently claimed invention, and Applicant respectfully submits that independent claim 19 is allowable and urges the Examiner to withdraw the rejection. Applicant further submits that claim 20 is also allowable as depending either directly from allowable base claim 19.

Based on the foregoing, Applicant respectfully submits that neither Cuny nor Blake anticipate any of the claims of the present invention. As such, Applicant respectfully requests that the rejections under 35 U.S.C. § 102 be withdrawn from consideration.

Claim Rejections -- 35 U.S.C. § 103

3. Obviousness rejection based on Cuny in view of United States Patent No. 5,718,714 to Livneh.

Claims 5, 8, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cuny in view of United States Patent No. 5,718,714 to Livneh (hereinafter referred to as "Livneh"). Applicant respectfully submits that each of claims 5, 8 and 15 are now allowable as depending from an allowable base claim, as described hereinabove, and urges the Examiner to withdraw the rejection.

4. Obviousness rejection based on United States Patent No. 6,077,286 to Cuschieri et al. in view of United States Patent No. 4,369,788 to Goad.

Claims 1, 6, and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,077,286 to Cuschieri et al (hereinafter referred to as "Cuschieri") in

view of United States Patent No. 4,369,788 to Goald (hereinafter referred to as "Goald").

Applicant respectfully traverses this rejection, as hereinafter set forth.

With regard to independent claim 1, it is respectfully submitted that the teachings of Cuschieri and Goald, taken individually or collectively, do not support a *prima facie* case of obviousness against claim 1. More specifically, the combination of Cuschieri and Goald fails to teach or suggest all of the limitations recited in the claim, namely that the surgical device includes a finger actuator comprising a finger receiving portion operable with a translating shaft, which translating shaft couples directly to a rod disposed with an elongated tubular portion, and where the finger actuator moves in a non-pivoting, linear manner to directly effectuate an equidistant linear movement of the rod, as recited in claim 1.

As stated hereinabove, the present invention recites a surgical device 10 having an ergonomic handle 12 that is shaped to conform to a user's hand 14 held in a relaxed functional position. (FIGS. 1-2; page 3, lines 12-18). The handle 12 includes an aperture in which is positioned the finger receiving portion 30 of a finger actuator 16 that is operable with a translating shaft 28. (FIG. 4; page 4, lines 21-29). The translating shaft of the finger actuator 16 is directly coupled to a rod 20 slidably located within an elongated tubular portion 18, so that a non-pivoting linear motion (as shown by arrows in FIG. 2) of the finger actuator 16 directly effectuates an equidistant linear movement of the rod 20. (FIG. 2; page 3, line 19-page 4, line 2). As can be seen, no mechanical leveraging or gearing, etc. is applied between the finger receiving portion 30 and the rod 20, so that a 1:1 ratio of displacement exists between the displacement of the finger actuator 16 and the displacement of the rod 20.

In contrast, Cuschieri teaches an instrument consisting of two handpieces 3 and 4, with stationary handpiece 3 having a thumb ring 31 and pivoting handpiece 4 having a shackle 41 which permits the opening of the jaws and prevents the fingers from sliding off when closed. (see Cuschieri; FIGS. 1-3, Col. 3, lines 10-19). The handpiece is coupled to a shaft element via a universal joint that allows the orientation of the handle relative to the shaft element to be varied. (Col. 3, lines 20-28). Goald, furthermore, teaches reversible forceps with thumb and finger rings 22, 24 that allows the pivotable handle member 40 to be pivotably actuated against rigid member 20. (see Goald; FIGS. 4-5, Col. 5, lines 33-53).

At no point do Cuschieri or Goald, taken separately or together, teach or suggest a finger

actuator comprising a finger receiving portion operable with a translating shaft. Furthermore, nowhere do the two references teach or suggest the finger actuator moving in a non-pivoting, linear manner to directly effectuate an equidistant linear movement of the rod slidably located within an elongated tubular portion. Consequently, Applicant respectfully submits that the combination of Cuschieri and Goald fails to teach or suggest all of the limitations recited in independent claim 1, and which is therefore allowable. Applicant further submits that claims 6 and 7 are also allowable as depending, either directly or indirectly, from allowable base claim 1.

Based on the foregoing, Applicant submits that the prior art does not render the claims of the present invention obvious. As such, Applicant respectfully requests that the claims of the application be reconsidered and that the rejection under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Applicant respectfully submits that the proposed claims are neither anticipated nor rendered obvious by the prior art references cited by the Examiner. As such, Applicant believes that the application is now in a condition for allowance, and action to that end is respectfully requested.

If any impediments to the allowance of this application for patent remain after the above amendments and remarks are entered, the Examiner is invited to initiate a telephone conference with the undersigned attorney of record.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 20-0100.

DATED this 13th day of April, 2009.

Respectfully submitted,

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